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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,165	11/26/2001	Jeffrey R. Thomas	ITWO:0019	9370
7590 09/20/2005			EXAMINER	
Ralph A. Graham Fletcher, Yoder & Van Someren P.O. Box 692289 Houston, TX 77269-2289			LEUNG, PHILIP H	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/995,165	THOMAS ET AL.	
	Examiner	Art Unit	
	Philip H. Leung	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21, 23, 25-27, 37-40 and 42-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15, 21, 23, 25-27, 37-40 and 42-45 is/are allowed.
- 6) ☒ Claim(s) 16-20 and 46-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 46-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Rohrbaugh et al (US 5,770,838) (previously cited).

The broadly worded claim 46 which only recites “a heating system, comprising: a controller operable to control operation of a power source electrically coupled to an induction heating device, wherein the controller provides a user with a menu of heating operations that may be programmed into the controller in any combination to establish a desired workpiece temperature profile” is also met by Rohrbaugh. More particularly, it shows the use of a thermal model 308 and input device 306 for inputting control data to the programmable controller 302 for controlling the heating to achieve a specific temperature profile by increasing or decreasing power input (see Figure 3 and col. 4, line 18 – col. 5, line13). The thermal model 308 and the input device 306 are clearly the same as the claimed menu of heating operations. The controller is inherently operable to control a power source coupled to any heating device including an induction heating device as claimed as it is only an intended use and adds little patentable weight to the heating system.

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3. Claims 46-50 are further rejected under 35 U.S.C. 102(b) as being anticipated by Harris (US 5,746,114) (previously cited).

The broadly worded claim 46 “a heating system, comprising: a controller operable to control operation of a power source electrically coupled to an induction heating device, wherein the controller provides a user with a menu of heating operations that may be programmed into the controller in any combination to establish a desired workpiece temperature profile” reads on any programmable cooking devices including Harris. More particularly, it shows a cooking system with a controller 25 with a remote controller 22 to control the power source and a menu of heating operations that may be programmed into the controller in any combination to establish a desired workpiece temperature profile (see col.6, lines 13-30 and Figures 1 and 9). The controller 22 is inherently operable to control a power source coupled to any heating device including an induction heating device as claimed as it is only an intended use and adds little patentable weight to the heating system.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 16-19 and 46-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toooh (US 4,606,529), in view of Ruget (US 3,603,130) and Yuki et al (US 5,385,200) (all previously cited).

Toooh shows a furnace 10 for heating metal workpieces, such as billets or slabs including a programmable processor controller 400 operable to control operation of an inductive heating power source operable to heat a workpiece in response to programming instructions stored in the control unit; and a user interface to enable a user to provide the programming instructions to the control unit, wherein the user interface enables a user to program the control unit to form a desired workpiece temperature profile with a temperature feedback control system operable to provide the controller with an electrical signal representative of the workpiece temperature by temperature sensors 120, 220, 320. At col. 2, lines 3-66, it teaches that adjustments of the heating rate of the gas burner is made by modifying the programs according to the deviation of the measured temperatures from the from the program (see also Figures 1-3 and col. 3, line 26 – col. 6, line 35). It uses a furnace with burners instead of an electrical heating device such as an induction heater. Ruget shows that it is well known to use either an induction heating elements or gas burners for heating metal workpieces such as billets (see Figure 3 and col. 4, lines 6-21). Yuki also shows the use of an induction heating device 34 with a programmable controller 36 to control the heating temperature of a metal workpiece with a temperature sensor 40. It teaches that the induction heater 34 may be replaced by other heating device utilizing an electric energy or a burner or other heating device utilizing a thermal energy or a fuel, *provided such heating device is capable of regulating the amount of heat generated* (see Figure 1 and col.16, lines 31-40). It would have been obvious to one having ordinary skill in the art at the time the invention

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was made to modify Tooch to operate the control system in any well known heating device including an electrical induction heating device instead of a gas burner for the well known advantages of induction heating devices, such as, cleaner operation and more efficient heating of only the metal workpieces, in view of the teaching of Ruget and Yuki. It is pointed out that the limitations “for an induction heating system” and “control unit operable to control operation of an inductive heating power source” in claim 16 do not positively recite an induction heating system (c.f. claim 21 which includes establish a sequence of inductive heating operations to be performed automatically by the induction heating system from a selection of inductive heating operations). Any heating program would result “a desired temperature profile” as claimed.

6. Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tooch (US 4,606,529), in view of Ruget (US 3,603,130) and Yuki et al (US 5,385,200), as applied to claims 16-19 and 46-50 above, and further in view of Fox et al (US 5,266,764) (previously cited).

Tooch combined with Ruget and Yuki shows every feature as claimed except that the controller is portable. Fox shows that it is well known in an induction heating system having induction heater 12 to use a portable unit 20 including a temperature controller and a power supply (see Figures 1 and 3 and col. 3, line 48 – col. 4, line 60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tooch combined with Ruget and Yuki to use a portable control unit so that it can be adapted for various heating systems, in view of the teaching of Fox.

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7. Claims 1-15, 21, 23, 25-27, 37-40 and 42-45 are allowed.

8. Applicant's arguments have been considered but are not persuasive in regard to claims 16-20 and 46-50. As set forth above, claim 46 which recites a controller operable to control operation of a power source electrically coupled to an induction heating device still does not define over Rohrbaugh or Harris as the induction heating device is not a positive claimed element (see the specific reasons set forth above). Similarly, it is pointed out that the limitations "for an induction heating system" and "control unit operable to control operation of an inductive heating power source" in claim 16 do not sufficiently recite an induction heating system (in contrast, claim 21 which includes a limitation "establish a sequence of inductive heating operations to be performed automatically by the induction heating system from a selection of inductive heating operations" clearly set forth the induction heating). More importantly, the limitation "a desired workpiece temperature profile" is so broad that it reads on any programmable temperature control system as any heated workpiece would achieve a desired temperature profile according to the program. Therefore, claims 16-20 and 46-50 do not define over the art of record for the reasons set forth above.

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9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 472-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Philip H Leung
Primary Examiner
Art Unit 3742

P.Leung/pl
9-18-2005